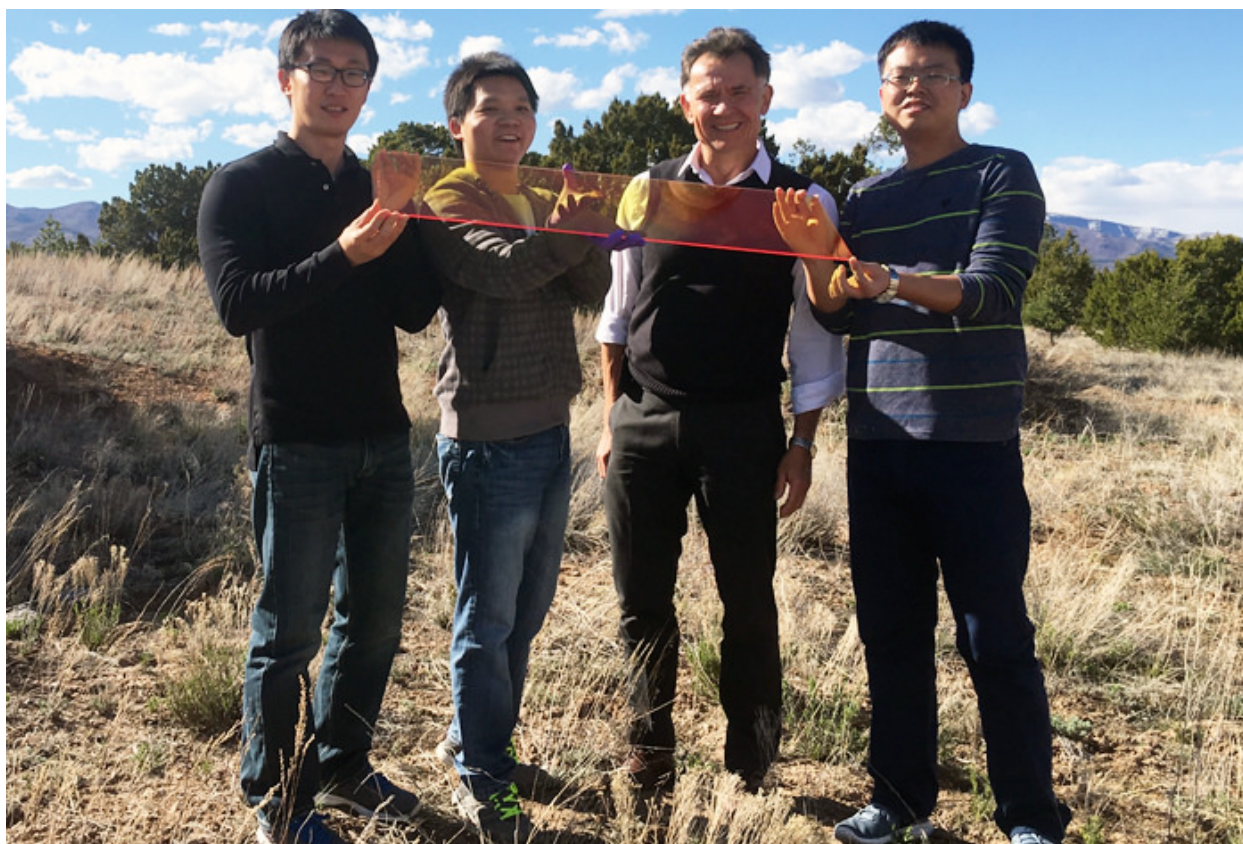


# Quantum-dot solar windows evolve with 'doctor-blade' spreading

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In a paper this week for the journal *Nature Energy*, a Los Alamos National Laboratory research team demonstrates an important step in taking quantum dot, solar-powered windows from the laboratory to the construction site by proving that the technology can be scaled up from palm-sized demonstration models to windows large enough to put in and power a building.

Luminescent solar concentrators (LSCs) are light-management devices that can serve as large-area sunlight collectors for photovoltaic cells. An LSC consists of a slab of transparent glass or plastic impregnated or coated with highly emissive fluorophores. After absorbing solar light shining onto a larger-area face of the slab, LSC fluorophores

re-emit photons at a lower energy and these photons are guided by total internal reflection to the device edges where they are collected by photovoltaic cells. In the *Nature Energy* paper, the team reports on large LSC windows created using the "doctor-blade" technique for depositing thin layers of a dot/polymer composite on top of commercial large-area glass slab.

[Read the article in Phys.org.](#)

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